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BIRDS.

Birds. By A. H. Evans, M.A. Being Vol. ix. of the Cambridge Natural History. Pp. xvi + 635. (London: Macmillan and Co., Ltd., 1899.)

IN getting together the material for this exceedingly elaborate treatise upon birds, Mr. Evans has shown an industry and discrimination which must at once be obvious to those who have any acquaintance with the enormous literature of the group. When one thinks of the many long handbooks upon British birds only, and the extensive series of large monographs upon special families, it is really a matter for wonder how the author can have condensed into rather less than 600 pages an account of the external characters of so huge a number of existing and extinct genera and species. Mr. Evans has accomplished this difficult task by compressing into as few words as possible the salient characters, or, in many cases, character, of the genus or species, and by a rigid economy in the matter of anatomical and "bionomical" fact. This is not mentioned by way of an introduction to a criticism of the method adopted by the author. It is obviously desirable that the volumes of the Cambridge Natural History should preserve an approximate equality in size; while to give two volumes to birds —which would be necessary were their structure treated of as exhaustively as are the external features—would destroy the perspective of the series. Besides, as Mr. Evans mentions in his preface, several works, such as Dr. Gadow's contribution to Bronn's "Thierreichs," Fürbringer's colossal work, the anatomical sections in Prof. Newton's "Dictionary of Birds," and more recently still Mr. Beddard's "Structure and Classification of Birds," have rendered it less incumbent upon the author to deal more fully with this branch of ornithology. These considerations have clearly made it difficult for Mr. Evans to decide how much anatomy he should include in his work.

Only twenty-two pages are devoted to structure, geographical distribution, classification, and migration. It is unnecessary to point out that to deal with all these important matters, even in the briefest fashion, twenty-two pages is not quite adequate. It would have been better, perhaps, to have allowed the characters of the feathers and pterylosis, beak and claw, and colour and moult, to have absorbed more of this limited space, and to have slightly expanded the "terminology," with, perhaps, an explanatory diagram of the skeleton and of the viscera. In the part relating to feathers and external characters generally, that much discussed matter, "Quintocubitalism," is not even favoured with a mention, let alone a definition. It is unnecessary to point out that many other facts of importance in classification share the same neglect.

As to this latter department, Mr. Evans follows Dr. Gadow's scheme, for which we have a very considerable respect. But it really does not matter greatly in a book of this kind which of the more reasonable schemes is selected. "Quot homines tot sententiæ" (with a very distinct accent on the last word) is a maxim which might have been created for the science of ornithology. The schemes afloat are so very numerous, and so frequently based not upon anatomical fact but upon opinion. The only consolatory thought is that one of them must be right—so complex are the varied combinations and permutations.

As to the smaller details of classification, we are not always in accord with Mr. Evans. He places the African "Shoe bill," *Balaeniceps*, definitely with the herons, in the very same family Ardeidæ. The bird has not, it is true, been studied anatomically in anything like an exhaustive fashion; but enough is known, in our opinion, to militate against this placing of it. Indeed, in his prefatory sketch of the characters of the Ardeæ, the author admits that the bird "might well stand alone in a sub-family" opposed to other herons, or that it might even be handed over to the storks. This opinion is, however, abandoned when the actual bird comes to be treated of—a course of action which shows a somewhat unnecessary vacillation. Some ornithologists also would deprecate the isolation of the flamingo, and would definitely term it a stork. But it is not possible to be dogmatic upon the point. In the arrangement of the cuckoos among themselves, Mr. Evans follows Captain Shelley's British Museum Catalogue of the group. It does not appear to us to be requisite to allow so many as six sub-families; but with the exception of the Neomophinæ, concerning the merits of which defective anatomical knowledge does not permit of an opinion, the sub-families do represent grades of structural diversity. This, however, is only the case if we refer to each the genera which cluster round that particular genus from which the sub-family takes its name. To place among the Cuculinæ, typified by the common cuckoo of this country, the eastern *Eudynamis* and *Scythrops* is a very serious offence against the teachings of anatomy. It is to *Phoenicophäes* that the two genera in question are plainly most nearly allied. The matter is of further importance on account of Prof. Fürbringer's extremely reasonable suggestion that these three genera stand near to the base of the cuckoo tribe; a view supported—it should be added—by the former existence (as shown by fossil remains) of the genus *Phoenicophäes* in Europe.

While Mr. Evans has been unnecessarily liberal in his sub-divisions of the Cuculidæ, he has hardly done justice to the structural diversity that exists among the auks. If it was necessary to divide the cuckoos at all—and we are fully in accord with the author in so doing—it is at least equally advantageous to sub-divide the not more homogeneous family of the Alcidæ. The genera *Lunda* and *Fratercula* are connected by closer bonds than either is with *Uria* and *Alca*, while the two latter form an alliance which is equally patent to the anatomist.

It has been hinted that Mr. Evans is somewhat sparing of anatomical fact in this volume. At the same time he by no means ignores in places anatomical characters. For the most part we find that these characters are quite accurately described. But here and there is a slip. For instance, the Anseriformes are defined by the possession of two pairs of sterno-tracheal muscles, "a marked point of distinction from other Carinate birds." It is unquestionably true that this is a characteristic feature of the large group of ducks, geese, swans, and

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screamers; but they are not the only birds which possess this double allowance of extrinsic tracheal muscles. Among the Gallinaceous birds, which present in other points of structure such unexpected likenesses to the Anseres, the same arrangement of the muscles is met with. And the list of birds with two pairs of extrinsic tracheal muscles is not exhausted by the facts mentioned. The number of rectrices in the owls is not invariably twelve, as seems to be implied by Mr. Evans. It is certainly usually so, but one genus is said to possess only ten. This criticism may be fairly regarded as rather pedantic; not so, however, our objection to Mr. Evans' statement that in the owls "the syrinx is bronchial." There is no qualification of this bare sentence, which is only partially true. Many owls, it is well known, do show a purely bronchial syrinx—an interesting likeness to the goat-suckers; but in others the normal tracheo-bronchial syrinx is evident.

At intervals among the exceedingly conscientious descriptions of colour and plumage are to be discovered a few notes upon the customs and habits of the bird tribe. Mr. Evans is particularly emphatic upon the varied sounds and songs—an exceedingly useful part of the subject to lay stress upon. But the tyro, who is probably often puzzled by the notes of a strange bird, will be baffled by the variety of utterances which are described as occasionally pertaining to the same species. One species, for instance, is credited with so great a variety of noises that they can only be expressed by "a bray, a croak, a harsh cackle, a diabolical scream, a puppy's whine, or a soft whistle." "The voice of the goatsucker' is generally hollow, but is described in various cases as a "croak," a "loud shrill cry," a "sad whistle," a "jarring note," or a "moan." We presume that under these extraordinarily diverse tones more than one species is included, though it is not quite apparent from the text. The croaking of the goatsucker reminds us of a slight error in Prof. Newton's "Dictionary of Birds." The professor, under the heading "Night Raven," observes that it is "a bird frequently met with in fiction, but apparently nowhere else." Now it is quite curious that this word immediately follows "Nightjar" in the work referred to—curious because John Hunter, under the heading "Night-Raven," described the anatomy of the nightjar or goatsucker.

Under what may be termed "bionomics," Mr. Evans has some remarks upon mimicry, not condensed into a chapter or section, but scattered through the body of the work. These remarks are not numerous, only four instances being given, or at least noted, in the index. They are entirely among Passerines, and do not include, to our mind, the most striking examples of superficial likeness between birds remote from each other in the system. One of the very best instances is the likeness between the large ground cuckoo *Carpococcyx* and a gallinaceous bird. The cuckoo suggests a pheasant, in its size chiefly and gallinaceous strut, but the colours are not at variance with the view that it represents a genuine case of selective variation in the direction of a gallinaceous model; and it will be remembered that in the birds which the cuckoo suggests there are formidable spurs, which seem to form an excuse for the attempt at protection. But Mr. Evans is unnecessarily redundant when he speaks of this singular phenomenon as "unconscious mimicry"; no one could seriously urge a conscious attempt to put on the appearance of some other bird. But such instances do not form the strongest argument that the believer in mimicry has at his disposal. The advantage is not plain in most cases, and the question of genetic alliance, and therefore genuine likeness based upon affinity, is not to be settled at once. Prof. Garrod, it will be remembered, thought the cuckoos to be not far from the Gallinæ, and there is much to be said for his view.

Such general questions as migration are not neglected by the author. But he has not found space to treat of the matter in a comprehensive way. It may be that more has been written upon this subject elsewhere than it will quite bear; but Mr. Evans has erred—if he has erred—upon the absolutely opposite side. The astounding statements of Herr Gätke upon the prodigious velocity of the migration flight are, we are relieved to find, not accepted; in this matter Mr. Evans might well have quoted Mr. Whitlock's interesting criticisms of Dr. Gätke's calculations. The remarkable way in which individual birds are believed to return to the immediate neighbourhood whence they set forth, is strikingly illustrated by an instance which we have recently seen quoted, though the event itself happened in the year 1834. A gentleman resident in Poland captured a stork and fixed a collar round its neck made of iron, and inscribed "Haec ciconia ex Polonia." The following year the bird returned to his estate, but this time with a golden collar bearing the inscription, "India cum donis mittit ciconia polis." We can answer for the accuracy of the quotation, though the grammar seems to have suffered on behalf of the scansion.

The concluding remark which we have to offer about Mr. Evans' book can contain nothing but praise. The illustrations are most admirable, which indeed might be expected from their author, Mr. G. E. Lodge. The majority, at any rate, are by that well-known draughtsman; some few are from other sources. F. E. B.

A LADY'S DIGGINGS IN EGYPT.

The Temple of Mut in Asher: an Account of the Excavation of the Temple and of the Religious Representations and Objects found therein, as illustrating the History of Egypt and the main Religious Ideas of the Egyptians. By Margaret Benson and Janet Gourlay; the inscriptions and translations by Percy E. Newberry. Pp. xvi + 391. (London: John Murray, 1899.)

THE Egyptian goddess Mut was the wife of the god Ȧmen-Rā and the second member of the great Theban triad of deities, which consisted of herself, her spouse Ȧmen-Rā and her son Chonsu, the god of the Moon. She symbolised nature and was regarded as the mother of all things, as indeed her name *Mut*, "the mother," implies. Her temple at Karnak, situated in a district termed *Ȧsher* by the ancient Egyptians, stood to the south-west of the great temple of Ȧmen-Rā, to which it was connected by a long avenue of sphinxes. A little to the north-west stands the temple of Chonsu, her son, from which another avenue of sphinxes led to Luxor.

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